

SYSTEM AND METHOD FOR ROUTER PACKET CONTROL AND ORDERING**ABSTRACT OF THE DISCLOSURE**

Hardware interconnected around multiple packet forwarding engines prepends sequence numbers to packets going into multiple forwarding engines through parallel paths, After processing by the multiple forwarding engines, packets are reordered using queues and a packet ordering mechanism, such that the sequence numbers are put back into their original prepended order. Exception packets flowing through the forwarding engines do not follow a conventional fast path, but are processed off-line and emerge from the forwarding engines out of order relative to fast path packets. These exception packets are marked, such that after they exit the forwarding engines, they are ordered among themselves independent of conventional fast path packets. Viewed externally, all exception packets are ordered across all multiple forwarding engines independent of the fast path packets.

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